AMENDMENTS TO THE CLAIMS

Please amend the Claims as follows. Insertions are shown underlined while deletions are ~~struck through~~. Please add Claims 18-19.

1 (currently amended): A method for manufacturing a homeotropic alignment liquid crystal film comprising the steps of:

coating a side chain type liquid crystal polymer of a monomer unit (a) containing a liquid crystalline fragment side chain and a monomer unit (b) containing a non-liquid crystalline fragment side chain on a substrate on which a vertical alignment film is not formed, said liquid crystal polymer being a polymer prior to the coating thereof and being capable of homeotropic alignment by heating;

after the substrate is coated with the liquid crystal polymer which is in a liquid crystal state, ~~homeotropically aligning~~heating the liquid crystal polymer ~~by heating~~to form a homeotropically-aligned liquid crystal polymer which shows nematic phase; and

cooling the aligned liquid crystal polymer to a temperature lower than a glass transition temperature of the liquid crystal polymer to fix~~ing~~ a resulting homeotropic alignment state of the liquid crystal polymer.

2 (previously presented): The method according to claim 1, wherein a material of said substrate is a polymer, glass or metal.

3 (canceled)

4 (canceled)

5 (canceled)

6 (canceled)

7 (canceled)

8 (canceled)

9 (currently amended): A method for manufacturing a homeotropic alignment liquid crystal film comprising the steps of:

coating a liquid crystalline composition on a substrate on which a vertical alignment film is not formed, said composition being capable of homeotropic alignment by heating and comprising a side chain type liquid crystal polymer and a photopolymerizable liquid crystal compound, said side chain type liquid crystal polymer being a polymer prior to the coating of the liquid crystalline composition;

after the substrate is coated with the liquid crystalline composition which is in a liquid crystal state, ~~homeotropically aligning~~heating the liquid crystalline composition ~~by heating~~to form a homeotropically-aligned liquid crystalline composition which shows nematic phase;

cooling the aligned liquid crystalline composition to a temperature lower than a glass transition temperature of the liquid crystal polymer to fix~~ing~~ a resulting homeotropic alignment state of the liquid crystalline composition; and

applying optical irradiation to the liquid crystalline composition to further fix the liquid crystalline composition.

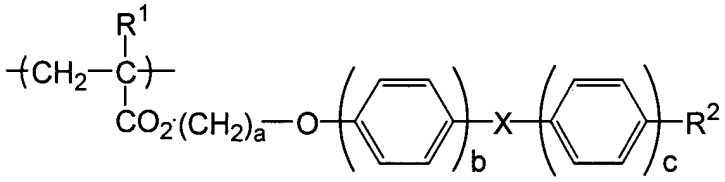
10 (previously presented): The method according to claim 9, wherein a material of the substrate is a polymer, glass or metal.

11 (canceled)

12 (canceled)

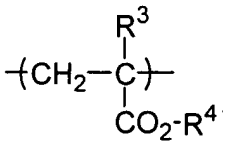
13 (canceled)

14 (withdrawn): The method according to claim 1, wherein said monomer unit (a) comprises a monomer unit represented by the following formula:

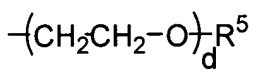


wherein R^1 is a hydrogen atom or a methyl group, a is a positive integer of 1 to 6, X is $-CO_2-$ group or -OCO- group, R^2 is a cyano group, an alkoxy group with 1 to 6 carbon, fluoro group or alkyl group with 1 to 6 carbon, and b and c are integers of 1 or 2 respectively; and

said monomer unit (b) comprises a monomer unit represented by the following formula:



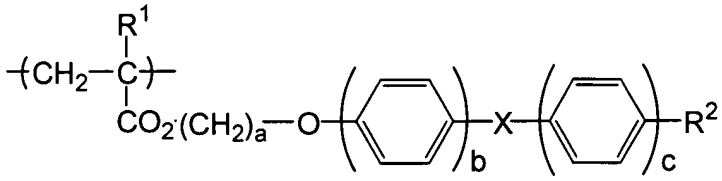
wherein R^3 is a hydrogen atom or a methyl group, R^4 is an alkyl group with 1 to 22 carbon, a fluoroalkyl group with 1 to 22 carbon, or a monomer unit represented by the following formula:



wherein d is a positive integer of 1 to 6, and R^5 is an alkyl group with 1 to 6 carbon.

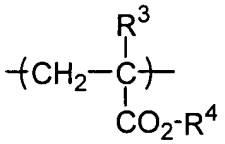
15 (withdrawn): The method according to claim 1, wherein said heating is conducted at 70°C - 200°C.

16 (withdrawn): The method according to claim 9, wherein said side chain type liquid crystal polymer comprises a monomer unit (a) containing liquid crystalline fragment side chain and a monomer unit (b) containing non-liquid crystalline fragment side chain, said monomer unit (a) comprising a monomer unit represented by the following formula:

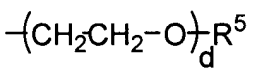


wherein R^1 is a hydrogen atom or a methyl group, a is a positive integer of 1 to 6, X is $-CO_2-$ group or -OCO- group, R^2 is a cyano group, an alkoxy group with 1 to 6 carbon, fluoro group or alkyl group with 1 to 6 carbon, and b and c are integers of 1 or 2 respectively; and

said monomer unit (b) comprising a monomer unit represented by the following formula:



wherein R^3 is a hydrogen atom or a methyl group, R^4 is an alkyl group with 1 to 22 carbon, a fluoroalkyl group with 1 to 22 carbon, or a monomer unit represented by the following formula:



wherein d is a positive integer of 1 to 6, and R^5 is an alkyl group with 1 to 6 carbon.

17 (withdrawn): The method according to claim 9, wherein said heating is conducted at 70°C - 200°C.

18 (new): The method according to claim 1, wherein the step of homeotropically aligning the liquid crystal polymer by heating comprises heating the liquid crystal polymer at a temperature of 60-300°C for a time period of 10 seconds to two hours.

19 (new): The method according to claim 9, wherein the step of homeotropically aligning the liquid crystalline composition by heating comprises heating the liquid crystalline composition at a temperature of 60-300°C for a time period of 10 seconds to two hours.

SUMMARY OF INTERVIEW

Applicant wishes to thank the Examiner for the courteous in-person interview extended to their representatives that was conducted on October 4, 2004. No exhibits or demonstrations were shown.

Identification of Claims Discussed

Claims 1, 2, 9 and 10 were discussed.

Identification of Prior Art Discussed

Akashi et al. (US 5,620,781), Kawata (US 5,730,900) and Hanmer et al. (US 6,379,758) were discussed.

Proposed Amendments

Applicant's representatives presented proposed amendments to the claim to further clarify the invention and thereby to distinguish from the prior art of record.

Principal Arguments and Other Matters

Applicant's representatives presented articles (Fazio et al., Golestanian et al. and Kumar) distinguishing nematic from discotic nematic and the means by which each is aligned.

Results of Interview

The Examiner agreed that the amended claim was patentable.